



HAMS ASSIST DURING ICE STORM



Photo by John N1GMV

NEW RARS Repeaters up and running Page 4
Meet the VE's Page 6
Hams at Shelter during ice storm Page 7
Spring RARS Class Page 10



The Exciter

The ***Exciter*** is the monthly newsletter of the Raleigh Amateur Radio Society. It is available in both printed and electronic form. The printed version is mailed to members just before each club meeting. The electronic form, in Adobe Acrobat PDF format, is e-mailed about a week earlier.

We solicit both articles and advertising. The deadline for submissions is first Friday of the month or Friday after the monthly meeting. Contact the Editor.

The views contained in the ***Exciter*** are those of the individual authors, and are not necessarily the views of the Editor, or the Raleigh Amateur Radio Society.

The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the Amateur Radio community in the greater Triangle area. In 1999, we incorporated a new RARS, and obtained 501(c)(3) Non-Profit tax status.

The objectives of the club are to promote worldwide friend-ship through Amateur Radio; to be of public service by providing radio communications in times of disaster, emergency, or civic need; to educate members in radio technique; and to provide training classes to assist in obtaining Amateur Radio licenses.

Anyone interested in Amateur Radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18.00 per year (from July 1 through June 30). Additional immediate family members pay \$5.00 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12.00 per year. Dues for non-licensed Associate members are \$9.00 per year.

Applications for membership may be obtained from the treasurer, or the RARS web site (www.rars.org).

Officers

President:	Bernard Blackmon W4BRB 919-467-8719 bernardb@mindspring.com
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INFO

RARS Repeaters in Raleigh Area
145.13
146.64
224.64
444.525 (88.5 PL)

WEB SITE <http://www.rars.org>

NEXT RARS MEETING: Tuesday, February 4, 2003 Introduction to 440 Repeater

RALEIGH AMATEUR RADIO SOCIETY MEETINGS

Date: Every first Tuesday of the Month

Location: Forest Hills Baptist Church, at Dixie Trail and Clark Avenue, in Raleigh

Time: 7:30pm, Folks start showing up a bit before 7 to chat, brag and eat donuts.

VE TESTING: The RARS VEs will accept walk-in testing which is on even months except April and December. Please bring a photo ID, your original current license if you have one, and any CSCEs you need for credit.. Check into the 8:00 pm net every night on the 146.64 repeater or www.rars.org for information.

The RARS Exciter depends on you. If you have an article, pictures or something you've learned and wish to share with others, please send or email to the editor.

NC QSO PARTY

The NC QSO Party is coming up soon. It's slated this year for 1700 UTC February 23 through 0300 UTC February 24 (that's 12 Noon to 10 PM on Sunday, February 24, local time a total of 10 hours). The contest is sponsored again this year by the Forsyth Amateur Radio Club in Winston-Salem.

The rules have not changed from last year, when 98 of the 100 North Carolina counties were active! We'd like to try and get all counties involved this year.

The website for the party is located at <http://www.w4nc.com>. Just click on the NC QSO Party tab.

For more information, contact:
Henry Heidtmann W2DZO (ex. N4VHK)
henry@summitschool.com

SPECIAL REQUEST FOR ASSISTANCE WITH RADIO NEWS HOUR

We are looking for someone to share responsibilities for playing the ARRL Radio Newshour every Sunday following the 8 PM net. The equipment needed for this is an interface between your computer and radio, such as a Rigblaster, as well as software to play a MPEG file. If you have questions or would like to volunteer, please contact Liz KF4UQZ or Mary KG4OQA.



Silent Key

It is with great sorrow that we report the passing of one of the RARS family members. Fontella Spratley, KE4IZZ passed away this afternoon, January 9. She was the wife of Ashby, W5PGX and mother of Ashby III, KB5ZIH and Jim, KE4NKX. Also, Fontella had a daughter-in-law Luci, KB8LVU

All of the Spratleys have been very active in RARS, and Fontella is best remembered for heading up the Hamfest Social for many years. She will indeed be missed by all.

Photo by Jeff AC4ZO

The Raleigh Amateur Radio Society is now accepting credit card payments online for new members and membership renewals. You can join or renew your membership completely online using a secure credit card payment mechanism.

See the RARS web site www.rars.org for more information about how to sign up for RARS membership or renew for 1, 2 or 3 years.

All RARS members can obtain a membership card by calling Denyse KG4CXR 919-468-5358 or email KG4CXR@nc.rr.com

FM Committee – RARS Tech Support meetings are held on the 5th Tuesday of any month that has 5 Tuesdays. Meetings are held at Danny Musten's office (KD4RAA)

146.88 145.39, 147.105, & 147.135
Repeaters are supported by PCRN
if you would like to donate please
make checks to:
PCRN
PO Box 12734
Raleigh, NC 27605

More info on PCRN:
[Http://www.pcrn.net](http://www.pcrn.net)

NET REPORTS FOR December, 2002

- ♦ 8:00PM DAILY: RARS Evening Net
- ♦ 9:00PM MON: SWL SIG
- ♦ 8:30PM SAT : Tech & Traders net

Total Net Activity:

Minutes: 793
Check-Ins: 445 in 34 Sessions
Traffic : 36 brought 29 passed

New RARS Repeaters!

by Gary Pearce KN4AQ

The long-awaited new RARS repeaters have begun appearing on the air.

The first to arrive is 444.525, located on our "Bayleaf" tower in north Raleigh. It appeared just before Thanksgiving, and after a few tweaks it appears to be working well. Club members have been "discovering" it ever since.

Next on the air will be the 145.13 machine, back at its old home on the DH Hill Library on the NC State campus. It may be back by the time you read this, but if not, it should be on soon. After that, we'll replace the 146.64 machine that's been on loan from K4ITL with our own repeater. We have all these repeaters, and they're being set up to go now. A replacement 220 repeater will take a little longer, as we haven't decided what to buy yet (the Bayleaf site is ready for 220 with duplexer, antenna and controller in place).

The new repeaters are Kenwoods - Model TKR 750 for VHF and 850 for UHF. They are fairly basic, 30 watt repeaters. We've added the S-Com 7K controller, and a CSI "Shared Repeater" tone panel (more on that in a minute). Our goal is to make all the RARS repeaters behave the same, with the same tone features and open autopatch, with a few exceptions (146.64 will not require tone, and 145.13 will not have autopatch). The 444.525 repeater requires 88.5 tone. We may change that soon, because the 145.13 repeater, coming next, can't use 88.5, and we may decide to keep all the RARS repeaters using the same tone (146.64 will remain carrier access). Stay tuned for more information.

THE SECONDARY TONE - QUIET LISTENING

Now, the Secondary Tone. Have you ever wanted to be able to use the repeater to reach a licensed spouse or friend some-time throughout the day, but they didn't want to have to listen to the chit-chat that comes and goes? Would it be helpful to have a way to listen to the repeater, but hear only calls directed to you? The secondary tone offers almost that degree of exclusivity.

In addition to the primary tone, the repeater will activate and regenerate on the secondary tone - 203.5 Hz (this one we have decided on for sure). Set your CTCSS encode/decode to 203.5, turn on the decoder, and you will hear only stations using that tone. Arrange with your spouse or friend to turn on 203.5 when they want to reach you. Then, all day long, the only time you'll hear anything on the RARS repeater is when someone makes a call using the secondary tone. Yes, you will hear calls for other people who are also using the secondary tone system, but you won't hear their subsequent conversation or other ragchewing.

NO RAGCHEWING ON THE SECONDARY TONE!

A couple of important points about using the secondary tone. First, no conversations allowed - just calling! If you've made a call and gotten a response, immediately switch to the primary tone to continue your conversation.

The reason for this should be obvious - others using the secondary tone don't want to hear your conversation. That's why they're using the secondary tone! This will be enforced by a 30 second timer on the secondary tone. If the repeater sees activity on the secondary tone for 30 seconds, that tone will be automatically disabled for a minute.

Also, if you've been monitoring quietly using the secondary tone and now you want to call someone, be sure to check to see if the repeater is in use before you call. Remember, the repeater can be in use with people on the primary tone, and you won't hear any of it. Your S-meter should still show activity, or a "busy" light should light, if you look for it.

MEMORIES WILL HELP

To keep from fumbling with your radio, switching tones on and off, I recommend using memory channels. Program the repeater with the primary tone in one memory, and the secondary tone (with decode ON) in the next memory. Now you can easily switch back and forth.

The system is fairly simple, but it's not foolproof. I expect we'll hear someone get clobbered now and then because someone else forgot to switch from the secondary tone before making a call, and didn't realize that the repeater was in use. It already happens when people have their dual-band radio set to the wrong band, or have their volume turned down. Don't fret, it's not that serious.

If you have a question about how to use the tone system, call me or drop a line to kn4aq@arrl.net.

CREDITS

I "spec'ed" the repeater system, in consultation with Danny Hampton K4ITL. Danny checked them out and put them together. Fred Decker N4IXL programmed the S-Com controller, and Tom Brown N4TAB researched the tone panel, did the final check-out and set up the tone panel. Mike Murphy WA4BPJ installed the grounding and lightning protection system, and prepared the rack cabinet with properly grounded AC, antenna and telephone connections. Bob Bryer K1RCB finished the inside of the Bayleaf repeater shack and made it super-nice.

So dust off the UHF side of your dual-bander, and get ready to spread out to the 145.13 machine, too.



The "444.525 repeater system" picture shows four items mounted in the rack at Bayleaf. Top to bottom, they are:

Duplexer

S-Com Controller

CSI Tone Panel

Kenwood TKR-850 Repeater



The "444.525 Duplexer" picture is shot from behind the rack and shows N4TAB screwing in the duplexer panel. It's a good shot of the duplexer, which shows only as a blank panel on the front of the rack. (by the way, the duplexer is the magic device that allows the repeater to receive and transmit in the same band at the same time).

Photos by Gary KN4AQ

What's A TONE PANEL?

By Gary KN4AQ

What's the story behind this "Shared Repeater Tone Panel"?

Its main purpose in life is to allow several customers to share a commercial repeater without having to hear each other's traffic. The users might be the gas station with a couple of tow trucks, a plumber, a delivery service, and a limo company. They all need radio communication, but none need (or can afford) their own repeater. So they lease time on a shared repeater.

They're all on the same frequency, but they don't want to listen to each other. And that's what CTCSS tone was invented for in the first place. Everyone uses a separate tone, and they hear only stations using their assigned tone.

The tone panel is the hardware that lets the system work through a single repeater. All commercial repeaters are tone access. But if you're going to use multiple tones, you need a box that can listen for all those tones, and regenerate them to the transmitter output. That's more reliable than letting the user's tones just pass through the repeater from the input to the output. Without some special work, the repeater won't handle those low frequency tones very well, and they could end up fairly distorted. It's better to strip them off the input and regenerate clean tones on the output.

You also need a traffic cop. Commercial repeater users don't generally ragchew, but now and then someone can get long-winded. The other users of what is essentially a "party-line" (kids, ask grand-pa what that is) don't want to wait a long time for a clear channel. So the tone panel has a programmable "hog-timer" for each tone. Use up your time, and the repeater stops responding to your group's tone, while it remains available to the other users. A minute or so later, you can use the repeater again. The tone panel can also "lock out" everyone else while your group is using the repeater so you're not interrupted (until you invoke the "hog timer" and get shut out yourself).

For RARS use, we quickly learned some lessons about the tone panel. Initially we set it up to recognize many tones, figuring that everyone could pick their own "calling tone" for greater exclusivity. All but the primary tone would have the short hog timer. But we realized that education was going to be a big problem. Some hams would "discover" the repeater's tone by trial and error on the air rather than learning about it in our own publications or web site. With a lot of tones available, they'd likely discover one of the secondary tones, try using the repeater, and wonder why it only worked for 30 seconds (while others were still able to use it). So we cut it back to one primary and one secondary tone.

We also recognized the potential for "unbreakability." That is, two hams talking on the secondary tone with their CTCSS decoders on would not hear someone trying to break in on them using the primary tone. That problem is reduced by the hog timer, and by having only one secondary tone for a control operator to try. We set the secondary tone to a high tone frequency so that you can actually hear it if you listen carefully enough.

There are probably more lessons to learn from this new system as time goes by. Give it a try, and let us know!

MEET THE VE'S

LIZ WHITE, KO4CK



My interest in ham radio started in 1991. I had always been curious about the hobby and circumstances led me to take a class given by RARS. At that time the classes were held at the McKimmon Center in Raleigh. Joe had been a member of RARS for a long time and had always been involved with the VE team. I was a little nervous about taking the exams and the team helped make the experience a positive one. Since Joe was a member of the VE team, I naturally gravitated toward helping out. The RARS VE team had a reputation for being very friendly and helpful and I wanted to be a part of that. AA4MY, Vince Yakamavich (SK) was the Contact VE at the time and he was glad to have me join the team and helped me get my W5YI VE certification. Since a VE is limited in the areas of participation according to license class, I was motivated to achieve my Extra Class license so I could give and grade all parts of the exams and there could never be a problem caused by my inadvertently grading a test that I was not certified to grade. I have been working with the team since that time and have enjoyed it very much. W4VFJ, Charlie Brown took over when Vince stepped down and has done a wonderful job with the program. I have the highest respect for Charlie who, in my opinion, is a gentleman of the first

class. The shoes to be filled are indeed large. I only hope that I can contribute in a positive way and that the RARS VE Team will always maintain the reputation as a friendly, helpful group. I would never dream of taking on the responsibility alone. Joe and I have always worked well together as a part of the team and I hope we can carry on the tradition as the coordinators.

JOE WHITE, WA4GIR



Like Liz, I got into the VE program to give something back to amateur radio and, in a small way, to enable others to enjoy the hobby as I have. I got into ham radio back in high school when tubes were modern and transistors were still a curiosity. I stuck with the CW to get my speed up to the 20 wpm Extra Class requirement at the time partly to overcome my embarrassment of never passing the 7 wpm requirement for signaling merit badge in the Boy Scouts, and passed the amateur Extra Class exam at an FCC-administered exam at the RARSfest at the Crabtree Valley Mall (that should pretty well date me). When Vince asked for volunteers to become VEs sometime in the mid-80s, I jumped at the chance to "bring the exams to the people" since I could remember having my Dad drive me some distance to Winston to take the General Class exam at one of the infrequent FCC exam sessions conducted there. I've found the VE experience to be particularly rewarding. It's fun to encourage someone to take a test beyond what they came to take and even more rewarding if they pass. We do like to try to make people relaxed so the butterflies don't keep them from doing their best.

Liz and I have some big shoes to fill following in the footsteps of Vince Yakamavich and Charlie Brown. We are glad to have had the opportunity to work with both of them and we plan to continue doing things the way they did. Exams will be at the same times and locations as before and sessions will be conducted in the familiar manner with hopefully the same team of VEs. We will change things only if some time in the future we see ways to improve things, but at the present time, we want to keep things as they are. We welcome anyone who would like to work with us at exam sessions. Just give us a call at 387-9152 or drop us an Email at wa4gir@arrl.net or ko4ck@arrl.net.

Photos by Gary KN4AQ

ICE STORM

By Tim W4TME



Photo by Thomas KF4JKQ

Josh KF4EAG and Tim W4TME were at the Holly Springs shelter during the ice storm. They opened the shelter at the last minute and once open they lost power due to a transformer blowing up. They coordinated help for cots, food and water between the Raleigh EOC and the Cary Red Cross unit. The fire department set up trucks to power a few lights but no heat was available. City Management knew about hams, but not the councilmen of Holly Springs. When the fire station received calls for shelter they guided them or picked people up and took them to the Hunt Center. Around 20-25 people were in the shelter. The HT's would not hit the 146.88 repeater so a cross band was set up at Thomas Babb's home and relayed all messages to the EOC. The mayor of Holly Springs is now checking into setting up an antenna at the shelter for future use.

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2002 RALEIGH MARATHON



Mike N3YEP with the Supply Truck



Bob WX4MMM at a Rest Stop



Marian K1MRB at a Rest Stop



Laura KG4QHH at a Rest Stop

The Raleigh Marathon was the last ham event of 2002. Thanks to everyone who helped and took the time from working on the ice storm. A lot of people working on the Marathon had damage at their own homes, and most were without electricity. The air was cold and it was dark in those early hours as we were getting in place. It will be only a few weeks till we start the new year's events.

Photos by Thomas KF4JKQ

RARS NEW MEMBERS

JANUARY 2003

We would like to welcome our new members to RARS. Thank you for considering us for your amateur radio club.

Dick W4RGC

Virginia KG4PFA



**The Central Carolina
Skywarn Net Meets
Tuesdays at 9:15 PM
on 146.88 Repeater**

Remember to give damage reports AFTER the storms as well as DURING the storms.



Photo by Jim KG4FIJ

SKYWARN MONTHLY DINNER MEETING

by Denyse KG4CXR AEC Wake County

At the time of this publication, Skywarn dinner meeting for Feb 24th was not determined. We would like to meet in the Wilson, Wendell, or Rocky Mount area. Please listen to the Skywarn nets for more information.



**Join Us At the
RARS Dinner**



**Every 4th Tuesday, 6:30 pm at
Fat Daddy's on Glenwood Ave.**

Every Wednesday 9:30 145.19



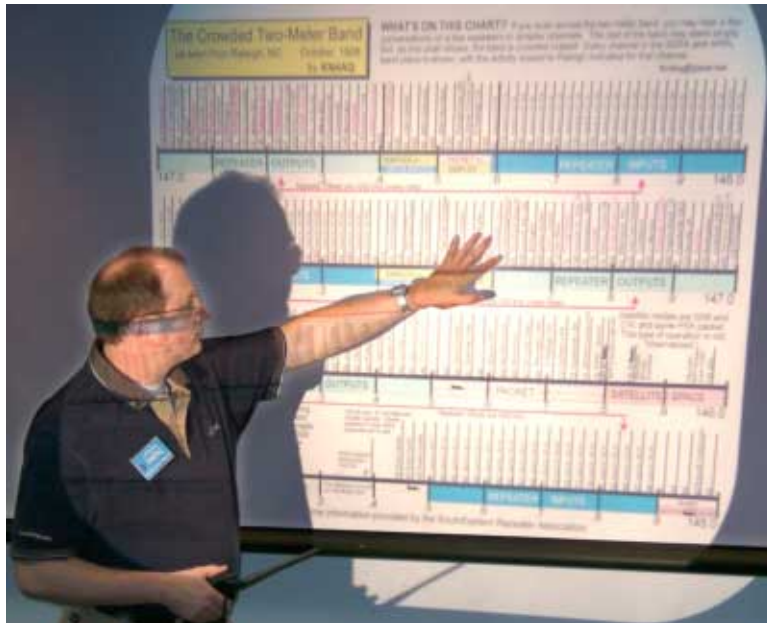
HAMFEST CALENDAR

February 1:	N. Charleston, SC
February 9:	Richmond, VA
February 22:	Dalton GA
March 8-9	Charlotte, NC
March 23	Kinston, NC
APRIL 13	RALEIGH, NC
April 19	Morganton, NC



Courtesy of the SERA Repeater Journal

RARS Tech Class Starts March 3rd



Do you know someone who has always wanted to get into ham radio, but just hasn't done it (yet)? Lots of us can relate to that story. And lots of you who are now licensed finally got in gear with the help of the RARS Class.

Time to do it again! The winter 2003 RARS Class will begin on Monday, March 3rd, 7:30 PM at the Nortel Technical Education Center. We'll follow the same outline as the past several years. The first Monday will be the introductory class. We'll hit Chapter One the next day, and work our way through the book until we hit the exam on Thursday, April 10 (just in time for the graduates to shop at the RARSfest on the 13th).

The details are on the RARS web site: www.rars.org/class. Spread the word! Put Monday, April 7th on your calendar to help with Tune In the World Night, and please stop by the class anytime to meet the students, and let them meet YOU!

TUNE IN THE RARS NEWS HOUR

◆ **Newsline**
◆ **ARRL Audio News**
Sunday Nights following the
RARS 8:00 Net on 146.64

TECH/TRADER NET
8:30 PM SATURDAY ON 146.64
TWO NETS IN ONE!

Minutes of the RARS General Membership Meeting
Tues, 1/7/03

The meeting was called to order at 7:36 PM by President Bernard Blackmon W4BRB.
One visitor was welcomed: John Kirkwood.

Treasurer's Report: Greg KE4PAX reported there are currently 284 members. Dues can now be paid online by credit card at the RARS website.

Announcements:

Tom N4TAB and John KG4HDT thanked everyone who supported ARES during the recent ice storm.

Tim W4TIM announced that he will be involved in amateur radio demonstrations in local schools and solicited volunteers to assist him.

Program: ARRL On-Line Courses, specifically the Amateur Radio Emergency Communications Course, was presented by Mary KG4OQA, Andy NI4S and Bob K4RLC. Also, NI4S showed and demonstrated his "go kit."

Gary KN4AQ announced the next 6-week RARS License Class will start on March 3rd. Also brought attention to the new video projector that was purchased for RARS club use.

Door prizes were won by Brian KA9QJT, Hank K4HM, and Larry KG4FIQ.

Meeting was adjourned at 8:30 PM.

Respectfully submitted, Jim Walter KG4FIJ, Secretary.

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Photo by Thomas KF4JKQ

The Ice Storm December 6, 2002. It had some beauty but also had some devastation. Hams provided support to many areas in the triangle, including support at a shelter in Holly Springs. See story on page 7.



Photo by Denyse KG4CXR